



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/712,371 | 11/13/2003 | Graham G. Thomason | GB 020196 | 1422 |

7590 03/07/2007
Corporate Patent Counsel
U.S. Philips Corporation
345 Scarborough Road
Briarcliff Manor, NY 10510

| |
|----------|
| EXAMINER |
|----------|

THORNEWELL, KIMBERLY A

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2128

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/07/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/712,371

Applicant(s)

THOMASON, GRAHAM G.

Examiner

Kimberly Thornewell

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-18 have been presented for examination.

Priority

2. Acknowledgement is made of applicant's claim for foreign priority based on an application 0226805.0 filed in Great Britain on 11/16/2002. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without

Art Unit: 2128

underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Applicant is therefore requested to amend the specification to include the proper section headings.

5. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (page 9 lines 4-5). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Interpretation

6. The term "world" (claims 1, 12, and claims dependent therefrom) has been interpreted in light of the Applicant's disclosure, page 9 lines 14-18.

Art Unit: 2128

7. The terms “set-actions” and “set-meta-events” have been interpreted in light of the Applicant’s disclosure, page 10 lines 5-16.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 12-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 12 is directed to “an apparatus for modeling a state machine, the apparatus comprising means for detecting if, from a state, an event gives rise to non-determinism, and means responsive to a positive determination for generating a world for at least one of the permutations, and means for processing the event in each of the worlds.” However, the Applicant’s specification discloses a method comprising steps for modeling a state machine. No disclosure of an apparatus is present. Furthermore, the claims fail to properly invoke 35 USC 112, sixth paragraph because none of the claimed “means” are sufficiently disclosed in the Applicant’s specification.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2128

11. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following terms suffer from a lack of sufficient antecedent basis to support the claims:

- “the permutations” and “the worlds,” claims 1 and 12.
- “the extant worlds,” claims 3 and 14.
- “the state model,” claims 6 and 17.

Furthermore, claims 1 and 12 recite the limitation of “processing the event in *each of the worlds*.” Although this limitation implies that multiple worlds are created, the previous claim language appears to be directed to generating a single world in response to non-determinism. Clarification is requested.

Claims 8 and 9 recite “non-deterministic branches.” This term is deemed vague and indefinite because the “branches” been defined in the Applicant’s specification.

Rejected claims not specifically discussed above are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 101

12. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claims 1-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 is directed to a method of modeling a state machine. The claim results in processing an event in a world, based on the detection of non-determinism. The Applicant has not set forth a tangible result of the method, because no practical application has been set forth. Because the applicant has not achieved a real-world result of the method, claims 1-9 are deemed non-statutory.

Claim 10 claims a computer program. A computer program, per se, is not patentable under 35 USC 101. However, a computer program on a computer readable medium, which when executed in a computer performs a method, is patentable. Moreover, the program of claim 10 is directed to carrying out the method of claim 1. Therefore, the method in claim 10 suffers the same deficiencies under 35 USC 101 as that of claim 1.

Claim 11 claims a computer programmed with the computer program of claim 10. Since the program of claim 10 does not have any practical application and does not produce a tangible result, the computer programmed with the computer program also has no practical application and does not produce a tangible result.

Claim 12 is directed to an apparatus comprising means for carrying out steps of a method similar to that set forth in claim 1. As noted in paragraph 9 above, claim 12 is a single means apparatus interpreted as software, per se. Hence, similar to claim 10 above, the apparatus has no application and no tangible result. Therefore the claim is not patentable under 35 USC 101.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2128

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Schafer et al., “Model Checking UML State Machines and Collaborations,” Electronic Notes in Theoretical Computer Science 2001.

As per claims 1 and 12,

Schafer discloses a method of and apparatus for modeling a state machine, comprising steps of and means for detecting if, from a state, an event gives rise to non-determinism (**page 4 last 2 lines-page 5 line 1, state *VerifyingPIN* branches non-deterministically to *PINCorrect* and *PINIncorrect***) and, if it does, generating a world for at least some of the permutations, and processing the event in each of the worlds (**page 5 line 2 – entire first full paragraph, if correct pin is entered, reset counter; if incorrect pin is entered re-enter pin**).

As per claims 2 and 13,

Schafer discloses following processing of the event, identifying identical worlds and disregarding all except one of the identical worlds (**page 8 second full paragraph last 6 lines**).

As per claim 3 and 14,

Schafer discloses processing a further event in all of the extant worlds (**page 8 third full paragraph, completion event**).

Art Unit: 2128

As per claims 4 and 15,

Schafer discloses permuting or taking a selection of permutations of set-actions (**page 9 fourth full paragraph, *history states***).

As per claims 5 and 16,

Schafer discloses permuting or taking a selection of permutations of set-meta-events (**page 8 fourth full paragraph, *transition events***).

As per claims 6 and 17,

Schafer discloses receiving a request for information on the state model from an external program, and responding to the request with the requested information (**page 10 second full paragraph, *use of HUGO to verify the feasibility of specified collaborations for UML state machines***).

As per claims 7 and 18,

Schafer discloses receiving an instruction to process an event, and processing the event in response thereto (**page 5 section 3 first 2 paragraphs**).

As per claim 8,

Schafer discloses receiving an instruction to eliminate a world for each of one or more non-deterministic branches, and in response thereto eliminating the specified world or worlds (**page 8 first full paragraph lines 4-9, *deactivation of a state and corresponding regions***).

As per claim 9,

Schafer discloses generating a world for one or more of the non-deterministic branches, and in response thereto refraining from generating the specified branch or branches (**page 6 second full paragraph**).

As per claim 10,

Schafer discloses a computer program containing instructions for a computer to carry out the instructions of claim 1 (*SPIN code*, **pages 5, 6, 7**).

As per claim 11,

Schafer discloses a computer programmed with the computer program of claim 10 (**page 4 last paragraph**).

Conclusion

16. The prior art made of record on the Form PTO-892 and not relied upon is considered pertinent to applicant's disclosure.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Thornewell whose telephone number is (571)272-6543. The examiner can normally be reached on 9am-5:30pm M-F.

Art Unit: 2128

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571)272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly A. Thornewell
Patent Examiner
Art Unit 2128

KAT


KAMINI SHAH
SUPERVISORY PATENT EXAMINER